3/21

1604N187

Candidate's Seat No : _____

M.Sc Semester-2 Examination

407

CB

Time : 2-30 Hours] **April-2024** **[Max. Marks : 70**

Instructions:

All Questions are compulsory
Draw neat and labeled diagram wherever necessary

Q-1		**Write the following**	**14**
	(i)	Which banding method is used to study abnormalities of chromosome Y, 1,9 &16 ? Describe it.	7
	(ii)	Write a principle of FISH technique. Explain detail protocol of manual FISH technique.	7
		OR	
	(i)	Describe in detail silver staining technique used for Nuclear Organizing Regions (NORs).	7
	(ii)	Write a note on types of probes with their uses in Fluorescence in Situ Hybridization.	7
Q-2		**Write the following**	**14**
	(i)	How Q banding is useful in cytogenetic study? Explain it with principle and applications.	7
	(ii)	Describe principle, workflow, and applications of formalin fixed paraffin embedded FISH technique.	7
		OR	
	(i)	Write a note on historical and theoretical perspective and technical considerations of Giemsa Banding (GTG) technique.	7
	(ii)	Explain in detail advantages and disadvantages of FISH and MFISH techniques.	7
Q-3		**Write the following**	**14**
	(i)	Describe secondary changes in inv(16) positive acute myeloid leukemia.	7
	(ii)	Define chemical safety. Describe different categories of chemicals.	7
		OR	
	(i)	Describe the risk stratifications in acute myeloid leukemia.	7
	(ii)	Define the term "control" and its types. Which control charts are used for	7

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graphical display of control values? Describe West-guard rules.

Q-4 **Write the following** **14**

(i) Write a note with diagrammatic representation of disease progression in CML. 7

(ii) What is NABL? Describe any three factors of management requirement in NABL-accredited laboratory. 7

OR

(i) Describe the secondary changes of t(8;21)(q22;q22) in detail. 7

(ii) Which are commonly used disinfectants in a laboratory? Explain clean-up procedures for different spillages in laboratory. 7

Q-5 **MCQs/ Short Questions (one or two line answer)/ Fill in the Blanks/ True or False (Any seven out of twelve)** **14**

1 **Satellite stalk generally observed on which chromosome?**

a Acrocentric **b** Sub metacentric

c Metacentric **d** Telocentric

2 **In Sister Chromatid Exchange,_____exchanges are normal.**

a 15 **b** 10

c 12 **d** 20

3 **In Fluorescence in situ hybridization, NP-40 is used as a_____.**

a Counter stain **b** Washing reagent

c Biotin labeled probe **d** Hybridization buffer

4 **Interferometer used in which technique?**

a Q-FISH **b** M-FISH

c SKY-FISH **d** COBRA-FISH

5 **Which enzyme is present in vector of BAC clone?**

a DNA polymerase I **b** Chloramphenicol acetyltransferase

c Mammalian deoxyribonuclease **d** Penicillin acetyltransferase

6 **A set of overlapping clones is called _____.**

a Counting **b** Islands

c Contig **d** Stokes shift

7 **The most common translocation involving 11q23 observed in Acute Lymphoblastic Leukemia is _____.**

a t(9;11)(p23;q23) **b** t(4;11)(q21;q23)

c t(10;11)(p12;q23) **d** t(11;19)(q23;p13.3)

8 Which cancer is formed by cancerous plasma cells? _____.

a Multiple Myeloma
b Lymphoma
c Burkit's Lymphoma
d Burkit's Myeloma

9 Patients carrying t(15;17) have a good response to_____.

a All Trans Retinoic Acid Therapy
b Imatinib Mesylate Therapy
c Soratinib Therapy
d Transzumab Therapy

10 OSHA stands for_____.

a Occupational Safety and Health Association
b Occupational Safety and Health Amendments
c Occupational Safety and Health Administration
d Occupational Safety and Health Accreditation

11 According to management requirement in a laboratory, any change in document to improve it- is called_____.

a Obsolete
b Revised
c Assessment
d Amendment

12 Flammable liquids have a flashpoint below _____.

a 100°F
b 300°F
c 250°F
d 150°F